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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/605,790

10/27/2003

Po-Wen Ku

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2789

27765

7590

03/18/2008

NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION
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EXAMINER

FLANDERS, ANDREW C

ART UNIT

PAPER NUMBER

2615

NOTIFICATION DATE

DELIVERY MODE

03/18/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/605,790	Applicant(s) KU, PO-WEN	
	Examiner ANDREW C. FLANDERS	Art Unit 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 7-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 31 January 2008 has been entered.

Response to Arguments

Applicant's arguments filed 31 January 2008 have been fully considered but they are not persuasive.

Applicant alleges:

The Examiner states that parameters taught by Lau are all user adjustable, therefore it is possible for a user to set these parameters so a time period for incrementing volume is always the same. As quoted in the specification of the instant application, however: "the time length of one sample is different for each kind of source material. For example, because the resolution of a CD is smaller than that of a DVD, a sample on a CD is longer than a sample on a DVD. Consequently, a volume change that requires that passing of 25 samples would take longer :for a CD than a DVD" (emphasis added.), Sample size is dependent on time, therefore, a time period as dictated by sample size depends on a media selected, and a user cannot adjust the sample size to control the time period. Therefore,

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the applicant asserts that Lau does not teach that any destination volume is achieved in the digital signal in the same amount of time.

Examiner respectfully disagrees with this allegation. First, certain features argued (i.e. the time length of one sample is different for each kind of source material) is not positively claimed. Secondly, since the other parameters are adjustable, the volume level can be increased in any desired time period by a user. While Lau does not necessarily anticipate adjusting the sample size, inputs with different sample sizes can still reach the desired volume in the same period by adjusting other factors.

Applicant further alleges:

Furthermore, if a user wants a time period for each operation to be the same by setting all user adjustable parameters, the user will have to calculate and set the values each volume increment operation, and therefore the time period taught by Lau is not predetermined.

Examiner respectfully disagrees. Calculations are not necessarily required. The system is capable of arriving at the destination volume in the same period depending on the adjustments made to the system. Since the system is capable of performing the functions, it anticipates the claim. These functions may be achieved through trial and error or just by using user feedback. Additionally, the time period is predetermined, it is a clock cycle as stated in the rejection. This clock cycle will not change

Applicant further alleges:

Lau does not teach determining a size of a volume increment according to the destination volume, the volume level of the digital signal,

and the predetermined time period, as Lau does not teach a predetermined time period. Lau explicitly discloses that a size of the volume level increment is fixed. Therefore, Lau does not teach determining a size of the volume level increment, as it is a fixed value. Claim 1 teaches determining a size determining a size of the volume level increment each volume increment operation, therein a size in one operation will be different from a size in another operation.

Examiner respectfully disagrees. Lau does not disclose that the volume level increment is fixed. In the rejection, the limitation is met by the increase in volume per clock cycle. This may be one or more steps. These steps together meet the limitation of the volume level increment. This are not fixed as is disclosed as the number of steps within a clock cycle are adjustable; col. 6.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Lau (US 6,535,611 B1).

Consider **claim 1**, Lau teaches a method of changing the audible volume level of a digital signal (Figure 5) comprising:

providing a destination volume ("VOL_f" column 6, line 26) to a DSP (Figure 2, multiplier 33; multiplier 33 operates and performs digital operations on a digital input signal and thus can be considered a DSP); and

with the DSP, gradually incrementing the volume level ("increasing the volume," column 6, line 26) of the digital signal by a volume level increment (i.e. the steps within a clock cycle) to the destination volume value within a predetermined time period ("clock cycle," column 6, lines 28-29);

whereby any destination volume ("VOL_f" column 6, line 26) is achieved in the digital signal in the same amount of time (Lau anticipates that the parameters of vol_step, max_step, and sampl_size are all user adjustable, col 6; thus a user may set these such that the values may encompass the largest volume change [systems min to systems max] and the smallest volume change in the a single clock cycle, thus anticipating the same amount of time limitation) and a size of the volume level increment is determined according to the destination volume(Vol_f), the volume level of the digital signal (Vol_i), and the predetermined time period(i.e. clock cycle) (the size of the vol_step per sample is determined based on the Voldiff which takes into account Vol_f and Vol_i as well as the volume increments per cycle).

Consider **claim 2**, Lau teaches the method of claim 1 wherein the incrementing step further comprises: gradually incrementing the digital signal ("gradually changing the signal volume level," column 5, lines 61-62) within a predetermined sample number ("sample_size," column 6, line 18) corresponding to the predetermined time period

("clock cycle," column 6, lines 28-29; with the parameters set to allow a max volume change fit within one cycle).

Consider **claim 6**, Lau teaches the method of claim 2 wherein the predetermined sample number ("sample_size," column 6, line 18) is user-selectable ("These parameter values are stored in a suitable buffer of the volume control circuit, and in some embodiments are user-selectable," column 6, lines 20-23).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 3 and 4** rejected under 35 U.S.C. 103(a) as being unpatentable over **Lau (US 6,535,611 B1)** in view of **Andersen et al. (4,550,425)**.

Consider **claim 3**, Lau teaches the method of claim 2 wherein the incrementing step further comprises:

subtracting the current volume value of the digital signal from the destination volume ($VOL_{diff} = VOL_f - VOL_OUT$," column 6, lines 37);

a volume step ("vol_step," column 6, lines 16);

incrementing the output signal by the volume step in a continuous fashion until the volume destination is reached (Figure 5, step 45).

Although Lau teaches a volume step, Lau only identifies a volume step, but does not specify how that variable is calculated. Lau does not explicitly teach dividing the result from the subtracting step by the predetermined sample number to obtain a volume step;

In the same field of endeavor, Andersen et al. teaches a similar formula used to calculate an increment step variable ($\text{Range Increment} = \frac{\text{MAX} - \text{MIN}}{16}$ Figure 4).

Therefore, since Lau does not specify how the volume step is calculated, it would have been obvious to one of ordinary skill in the art at the time of the invention to divide the difference between the destination and current volume by the sample number, in a similar manner taught by Andersen, in order “to calculate a scale factor” (Andersen, abstract).

Consider **claim 4**, the modified method of Lau teaches the method of claim 3 wherein the result from the subtracting step is a positive number (Lau, “If the desired volume difference is greater than the maximum number of volume level increments,” column 6, lines 46-47).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Lau (US 6,535,611 B1)** in view of **Andersen et al. (4,550,425)** as applied to claim 3 above, and further in view of **Jubien et al. (6,868,162 B1)**.

Consider **claim 5**, the modified method of Lau teaches the method of claim 3, and the step of subtracting the current volume from the destination volume.

However, Lau does not specify wherein the result from the subtracting step is a negative number.

In the same field of endeavor, Jubien et al. teaches a method and apparatus for automatic volume control in an audio system. In the apparatus in Figure 4, Lau teaches various slide controls (402, 404, 406, and 408). These slide controls are configured to the dB scale system, whereby -60 dB designates the lowest volume setting, while 0 dB designates the loudest volume setting.

When one uses the dB scale with 0 dB at the highest volume level, then the difference between the current volume and the destination volume levels will be a negative number.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to configure the volume scale of the modified method of Lau to the dB scale system with 0 dB as the reference level, in a similar manner taught by Jubien, because "0 dB represents the maximum volume that the player can handle without clipping" and "a dB volume scale is used in just about all professional audio equipment and a fair amount of consumer audio equipment as well"

(<http://www.misticriver.net/archive/index.php/t-36224.html>).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANDREW C. FLANDERS whose telephone number is (571)272-7516. The examiner can normally be reached on M-F 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571) 272-7546. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

acf

/Sinh N Tran/
Supervisory Patent Examiner, Art Unit 2615